

Client	شركة طرق الرياض للمقاولات	Report No.	240463.110
Project	مشروع البنية التحتية - مخطط تلل الغروب	Sampling Date	5-5-2025
Location	جدة - حي الامير فواز	Sample by	Hazem
Sample Description	BITUMINOUS WEARING COURSE LAYER	Report Date	7-5-2025
Station	STA 0+011 to STA 0+137.5 Raod 02 Block 10	Tested By	Saddam

Superpave Mix Design Analysis

Specimen I.D.	Bulk Specific Gravity of Compacted Specimen & Volumetric Properties						
	Ndes			Nmax			
	1	2	Ave.	1	2	Ave	Design Criteria
a. Weight in air, dry (gm)	4806.0	4812.0		4813.0	4816.0		
b. Weight in air, SSD (gm)	4809.5	4818.5		4821.1	4825.2		
c. Weight in water, (gm)	2862.5	2863.4		2907.9	2912.6		
d. Volume, (cc)	1947.0	1955.1		1913.2	1912.6		
e. Specific Gravity (Gmb) (a/d)	2.468	2.461	2.465	2.516	2.518	2.517	
Height @ Nini	130.0	132.0	131.0	131.0	130.0	130.5	
Height @ Ndes	115.0	116.0	116.5	110.0	109.0	109.5	
Height @ Nmax	—	—	—	110.0	109.0	109.5	
% Gmm @ Nini	84.4	83.6	84.0	—	—	—	89 MAX
% Gmm @ Ndes	95.4	95.1	95.3	—	—	—	96±2.0
% Gmm @ Nmax	—	—	—	97.2	97.3	97.3	98 MAX
Air Voids %	4.6	4.9	4.7	2.8	2.7	2.7	2.5 -5.5%
Voids in Mineral Aggregate (VMA) %	15.5	15.7	15.6	—	—	—	14min-16max
Voids Filled (VF) %	70.3	69.0	69.6	—	—	—	65 - 75
Dust Proportion:	1.17						0.80 - 1.60

Maximum Theoretical Specific Gravity (Gmm)				Mix properties	
Specimen I.D.	1	2	3		
a. Net weight of loose mix (gm)	2003.5			Gb =	1.026
b. Net weight of flask & water (gm)	9353.0			Gsb =	2.771
c. Net weight of flask, loose mix & water	10582.2			P _s =	94.889
d. Maximum Theoretical Specific Gravity, Gmm (A/(A+B-C))	2.587			Gse =	2.82
e. Average Gmm	2.587			Pba =	0.62
				Pbe =	4.52

			Total weight of Agg: 2118.4		Sieve analysis		
Extraction & Gradation			Sieve Size	Weight Retained gm	Percent Passing	JMF Limit	Ave.
			1-1/2"	0	100.0	100.0	100.0
			1"	0	100.0	100	100.0
			3/4"	0	100.0	100	100.0
Asphalt Content	1	2	1/2"	161	92.4	90 - 98	92.4
a. Wt of sample before test, gm	2232.5		3/8"	465	78.0	74 - 82	78.0
b. Wt of sample after test, gm.	2117.5		#4	905	57.3	50 - 60	57.3
c. Wt of filter before test, gm	31.5		#8	1302	38.5	32 - 42	38.5
d. Wt of filter after test, gm	32.4		#16	1535	27.5	23 -31	27.5
e. Wt of sample in filter (c-d), gm	0.9		#30	1725	18.6	16 - 24	18.6
f. Wt of total agg, (b+e) gm	2118.4		#50	1865	12.0	10 - 18	12.0
g. Wt of Bitumen, (a-f) gm	114.1		#100	1925	9.1	7 - 11	9.1
h. Percent AC (g/a x 100), %	5.11		#200	2006	5.3	3.5 - 6.5	5.3
i. Average Asphalt Content, %	5.11		Pan				
j. Optimum asphalt Binder content	5.0% ± 0.4						

Lab Tech.

Lab. Eng.



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